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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/005,321

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Thomas Honger Callisen

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10/13/2006

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EXAMINER

KISHORE, GOLLAMUDI S

ART UNIT

PAPER NUMBER

1615

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/005,321	Applicant(s) CALLISEN, THOMAS HONGER	
	Examiner Gollamudi S. Kishore, Ph.D	Art Unit 1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6,8,10,11,13-15,17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-6, 8, 10-11, 13-15, 17 and 19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The RCE dated 7-14-06 is acknowledged.

Claims included in the prosecution are 1-2, 4-6, 8, 10-11, 13-15, 17 and 19-23.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-6, 8, 10-11, 13-15, 17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al (5,954,998) in view of Disher (Science, 1999) or vice versa; that is, Disher in view of Zhou.

Zhou et al disclose detergent vesicular preparations prepared from diblock copolymers of propylene oxide and ethylene oxide (Pluronic). The vesicular preparations further contain surfactants and enzymes (abstract, col. 12, line 7-55; col. 16, lines 25-30 and Examples). Zhou et al do not specifically teach that the vesicles are made entirely from Pluronic and their examples indicate the use of vesicles prepared from novasomes, which contain only 20 % non-ionic surfactant and the rest lipids.

Disher teaches that amphiphilic diblock polymers (polyethylene oxide-polyethylethylene) like phospholipids when dispersed in water self-assemble into

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lamellar structures (vesicles) and the vesicles thus formed are tough vesicles and are useful for encapsulation (abstract and page 1145).

It would have been obvious to one of ordinary skill in the art to use vesicles made entirely from Pluronic which is an amphiphilic diblock polymer in the detergent compositions of Zhou et al since Disher teaches that such vesicles are tough; it would Alternately, to use Discher's vesicles made entirely from diblock polymers in the detergent vesicular compositions of Zhou et al would have been obvious to one of ordinary skill in the art since Zhou et al show that such compositions can be used to encapsulate enzymes in laundry preparations.

Applicant's arguments have been fully considered, but are not found to be persuasive. Applicant argues that in the previous office action, the examiner concedes that Disher does not teach vesicles for use in laundry detergent application, but nevertheless states that Zhou et al is the same field as in the present invention and that Zhou et al shows that the vesicles containing the diblock polymers maintain the stability in the presence of surfactants and can be used to encapsulate enzymes. Applicant further argues that the examiner is mistaken and has noted previously, the teachings of Disher in view of Zhou et al do not provide a suggestion that the vesicles of Disher are suitable for encapsulation of enzymes or suitable for compositions comprising surfactants. Applicant additionally argues that that fact that Zhou et al is in the same field as applicant's invention is irrelevant to whether it would have been obvious to one of ordinary skill in the art to apply the vesicles of Disher to encapsulate enzymes for use in detergents and that the suitability of a vesicular structure for encapsulation of

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enzymes and for use in the presence of surfactants is a delicate balance between, on one hand, the prevention of incorporation of surfactants in the vesicles leading to permeation of vesicles, and, on the other hand, the ability to release the content of the vesicles in an application. These arguments are not found to be persuasive. Whether the examiner has conceded that Disher does not use vesicles for use in laundry detergents application is not relevant issue in instant case since instant claims are not method of use claims, but instead, are drawn to either composition or method of encapsulation or improving the stability of the enzymes. Disher on page 1145 clearly teaches that the polymersomes have enhanced toughness and reduced permeability of membranes and that each synthetic membrane might find its own application in transport, rheology or encapsulation, rationally based on a suitable selection of material properties, thermal behaviors and permeabilities. Thus, Disher is clearly suggestive of toughness of the membranes and the manipulation of the membrane properties. It is therefore, would have been obvious to one of ordinary skill in the art to use the polymersomes of Disher for encapsulating the enzymes of Zhou et al. The motivation to combine need not be the same as applicant's in composition claims. Furthermore, as discussed in the previous action, instant claims do not recite the presence of a surfactant. In addition, if one were to agree with applicant's arguments that some may work and some may not work, then one can use the same rationale of unpredictability could be used in instant case. Different enzymes have different stabilities and denaturation properties and applicants themselves have neither shown nor provided a rationale for the applicability of the invention to all enzymes, let alone amylase used in

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instant example. In essence, applicants themselves have not shown the delicate balance between the stability and the ability of the vesicles to release any compound, let alone amylase used in the example.

3. Claims 1-2, 4-6, 8, 10-11, 13-15, 17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhou et al (5,954,998) in view of Disher (Science, 1999) or vice versa; that is, Disher in view of Zhou as set forth above, further in view of WO 97/24177 of record.

The teachings of Zhou et al and Disher have been discussed above.

WO 97 teaches liquid detergent compositions containing non-ionic block copolymers such as ethylene oxide-propylene oxide and encapsulating enzymes. The amount of this polymer is between 1-50 %. (abstract, page 19, lines 13-32 and pages 44-48. One of ordinary skill in the art would be motivated further to use the tough vesicular preparations made from the diblock polymers since WO 97, which also shows the use of these polymers in the same laundry detergent compositions, but not in vesicular form.

Applicant's arguments have been fully considered, but are not found to be persuasive. The examiner has already addressed applicant's arguments regarding Zhou and Discher. Applicant once again argues that WO discloses an encapsulation shell for an enzyme core, which is formed by in situ coacervation or condensation of a monomeric or polymeric agent, and the encapsulating layer resulting from the coacervation or condensation reaction is a randomly cross-linked structure and not a vesicular structure. This argument is not found to be persuasive since this reference is

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suggestive of stability to detergents as well as permeability (due to osmosis) the block polymers provide even in non-vesicular systems and therefore, one of ordinary skill in the art would expect more stability and permeability of the vesicular systems of Disher and would be motivated to use these in the teachings of Zhou. Furthermore, WO teaches on page 16 that non-ionic block copolymers such as ethylene oxide-propylene oxide condensates are stabilizers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gollamudi S. Kishore, Ph.D whose telephone number is (571) 272-0598. The examiner can normally be reached on 6:30 AM- 4 PM, alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Woodward Michael can be reached on (571) 272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Gollamudi S Kishore, Ph.D
Primary Examiner
Art Unit 1615

GSK